

## LISTAGE DES SEQUENCES

&lt;110&gt; Institut Pasteur

<120> ANTIGÈNES DE PLASMODIUM FALCIPARUM ET LEURS APPLICATIONS VACCINALES  
ET DIAGNOSTIQUES

&lt;130&gt; B5257AA\_01.txt

&lt;150&gt; CA 2,345,206

&lt;151&gt; 2001-05-16

&lt;150&gt; CA 2,346,968

&lt;151&gt; 2001-05-23

&lt;160&gt; 18

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

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&lt;212&gt; DNA

&lt;213&gt; Plasmodium falciparum

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&lt;212&gt; PRT

&lt;213&gt; Plasmodium falciparum

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Ser Asp Asn Lys Asn Asp Tyr Lys Lys Cys Asn Lys Asn Val Ile Lys  
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&lt;213&gt; Plasmodium falciparum

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Thr Glu Val Val Ser Glu Pro Glu Asp Ser Ser Arg Ile Met Thr Thr  
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Glu Val Pro Ser Thr Thr Val Lys Pro Pro Asp Glu Lys Arg Ser Glu  
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Glu Val Gly Glu Lys Glu Ala Lys Glu Ile Lys Val Glu Pro Val Val  
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20 25 30

tat ttt ttg gat gac aac aaa gaa aaa gat gtt agt aag aaa aga aaa 144  
Tyr Phe Leu Asp Asp Asn Lys Glu Lys Asp Val Ser Lys Lys Arg Lys  
35 40 45

gct caa ttg aag gat gaa tat gat aat ata tca agg agc aaa gaa aat 192  
Ala Gln Leu Lys Asp Glu Tyr Asp Asn Ile Ser Arg Ser Lys Glu Asn  
50 55 60

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100 105 110

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165 170 175

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att agg aat gaa aaa ata gaa aat aat aat aag aat gaa aaa tta ata Ile Arg Asn Glu Lys Ile Glu Asn Asn Asn Lys Asn Glu Lys Leu Ile 405 410 415	1248
aaa tca tat cct aca caa tca aaa aat gtt atg agt aca ttt tcc ttt Lys Ser Tyr Pro Thr Gln Ser Lys Asn Val Met Ser Thr Phe Ser Phe 420 425 430	1296
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aat ttg aga aaa aaa caa ttt agt tta tta gat gaa tct gaa gag atg 1392  
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 465 470 475 480

cat tta tta tat gta atg agt caa gtt gct tct cga tcc ttt ttt gat 1488  
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Tyr Phe Leu Asp Asp Asn Lys Glu Lys Asp Val Ser Lys Lys Arg Lys  
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Ala Gln Leu Lys Asp Glu Tyr Asp Asn Ile Ser Arg Ser Lys Glu Asn  
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Ile Asn Asn Ser Lys Lys Ile Lys Asn Glu Leu Ser Ile Lys Asp Asn  
 65 70 75 80

Met His Asp Tyr Ile Tyr Asp Asp Arg Ile Tyr Asn Asn Asp Lys Glu  
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Lys Asn Asp Tyr Lys Lys Cys Asn Lys Asn Val Ile Lys Ser Asp Asn  
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Ser Asp Ile Lys Ser Glu Asp Glu Tyr Ile Glu Pro Tyr Glu Lys Lys  
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245 250 255

Tyr Asn Ser Leu Leu Tyr Asn Ser Cys Asn Gly Glu Ile Ser Lys Ile  
260 265 270

Asn Lys Ile Ser Ser His Asn Asn Ile Asp Asn Asn Met Asp Asn Tyr  
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Asn Thr Phe Ala Asn Val Asn Asn Phe Ile Ile Tyr Ser Ser Asp Asp  
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Glu Ile Met Phe Pro Ile Lys Phe Asn Phe Glu Lys Leu Lys Asn  
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Ile Tyr Val Ile Glu His Ile Asp Lys Ile Tyr Tyr Asp Thr Phe Leu  
340 345 350

Asn Lys Asn Pro Ser Glu Lys Ser Val Phe Met Asn Asp Glu Ser Thr  
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Gly Tyr Leu Lys Asn Asp Val Asn Asp Lys Cys Val Val Asp Asn Ile  
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Ile Arg Asn Glu Lys Ile Glu Asn Asn Asn Lys Asn Glu Lys Leu Ile  
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Lys Ser Tyr Pro Thr Gln Ser Lys Asn Val Met Ser Thr Phe Ser Phe  
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aat gta cat aat tca caa cta ctt atc gaa att ata atg gct tct aaa Asn Val His Asn Ser Gln Leu Leu Ile Glu Ile Ile Met Ala Ser Lys 485 490 495	1488
caa gaa gga aag tta tta tgg aaa aaa cat gga aca ata ctt gat aac Gln Glu Gly Lys Leu Leu Trp Lys His Gly Thr Ile Leu Asp Asn 500 505 510	1536
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tca caa agt gga tta gat caa tcc tca aaa gta gga gta gcg agt gaa Ser Gln Ser Gly Leu Asp Gln Ser Ser Lys Val Gly Val Ala Ser Glu	915	920	925	2784
caa aat gaa att tct tca gga caa gaa caa aac gta aaa agc tct tca Gln Asn Glu Ile Ser Ser Gly Gln Glu Gln Asn Val Lys Ser Ser Ser	930	935	940	2832
cct gaa gta gtt cca caa gaa aca act agt gaa aat ggg tca tca caa Pro Glu Val Val Pro Gln Glu Thr Thr Ser Glu Asn Gly Ser Ser Gln	945	950	955	2880
gac aca aaa ata tca agt act gaa cca aat gag aat tct gtt gta gat Asp Thr Lys Ile Ser Ser Thr Glu Pro Asn Glu Asn Ser Val Val Asp	965	970	975	2928
aga gca aca gat agt atg aat tta gat cct gaa aag gtt cat aat gaa Arg Ala Thr Asp Ser Met Asn Leu Asp Pro Glu Lys Val His Asn Glu	980	985	990	2976
aat atg agt gat cca aat aca aat act gaa cca gat gca tct tta aaa Asn Met Ser Asp Pro Asn Thr Asn Thr Glu Pro Asp Ala Ser Leu Lys	995	1000	1005	3024
gat gat aag aag gaa gtt gat gat gcc aaa aaa gaa ctt caa tct Asp Asp Lys Lys Glu Val Asp Asp Ala Lys Lys Glu Leu Gln Ser	1010	1015	1020	3069
act gta tca aga att gaa tct aat gaa cag gac gtt caa agt aca Thr Val Ser Arg Ile Glu Ser Asn Glu Gln Asp Val Gln Ser Thr	1025	1030	1035	3114
cca ccc gaa gat act cct act gtt gaa gga aaa gta gga gat aaa Pro Pro Glu Asp Thr Pro Thr Val Glu Gly Lys Val Gly Asp Lys	1040	1045	1050	3159
gca gaa atg tta act tct ccg cat gcg aca gat aat tct gag tcg Ala Glu Met Leu Thr Ser Pro His Ala Thr Asp Asn Ser Glu Ser	1055	1060	1065	3204
gaa tca ggt tta aat cca act gat gac att aaa aca act gat ggt Glu Ser Gly Leu Asn Pro Thr Asp Asp Ile Lys Thr Thr Asp Gly	1070	1075	1080	3249
gtt gtt aaa gaa caa gaa ata tta ggg gga ggt gaa agt gca act Val Val Lys Glu Gln Glu Ile Leu Gly Gly Glu Ser Ala Thr	1085	1090	1095	3294

gaa aca tca aaa agt aat tta	gaa aaa cct aag gat	gtt gaa cct	3339
Glu Thr Ser Lys Ser Asn Leu	Glu Lys Pro Lys Asp	Val Glu Pro	
1100	1105	1110	
tct cat gaa ata tct gaa cct	gtt ctt tct ggt aca	act ggt aaa	3384
Ser His Glu Ile Ser Glu Pro	Val Leu Ser Gly Thr	Thr Gly Lys	
1115	1120	1125	
gaa gaa tca gag tta tta aaa	agt aaa tcg ata gag	acg aag ggg	3429
Glu Glu Ser Glu Leu Leu Lys	Ser Lys Ser Ile Glu	Thr Lys Gly	
1130	1135	1140	
gaa aca gat cct cga agt aat	gac caa gaa gat gct	act gac gat	3474
Glu Thr Asp Pro Arg Ser Asn	Asp Gln Glu Asp Ala	Thr Asp Asp	
1145	1150	1155	
gtt gta gaa aat agt aga gat	gat aat aat agt ctc	tct aat agc	3519
Val Val Glu Asn Ser Arg Asp	Asp Asn Asn Ser Leu	Ser Asn Ser	
1160	1165	1170	
gta gat aat caa agt aat gtt	tta aat aga gaa gat	cct att gct	3564
Val Asp Asn Gln Ser Asn Val	Leu Asn Arg Glu Asp	Pro Ile Ala	
1175	1180	1185	
tct gaa act gaa gtt gta agt	gaa cct gag gat tca	agt agg ata	3609
Ser Glu Thr Glu Val Val Ser	Glu Pro Glu Asp Ser	Ser Arg Ile	
1190	1195	1200	
atg act aca gaa gtt cca agt	act act gta aaa ccc	cct gat gaa	3654
Met Thr Thr Glu Val Pro Ser	Thr Thr Val Lys Pro	Pro Asp Glu	
1205	1210	1215	
aaa cga tct gaa gaa gta gga	gaa aaa gaa gct aaa	gaa att aaa	3699
Lys Arg Ser Glu Glu Val Gly	Glu Lys Glu Ala Lys	Glu Ile Lys	
1220	1225	1230	
gta gaa cct gtt gta cca aga	gcc att gga gaa cca	atg gaa aat	3744
Val Glu Pro Val Val Pro Arg	Ala Ile Gly Glu Pro	Met Glu Asn	
1235	1240	1245	
tct gtg agc gta cag tcc cct	cct aat gta gaa gat	gtt gaa aaa	3789
Ser Val Ser Val Gln Ser Pro	Pro Asn Val Glu Asp	Val Glu Lys	
1250	1255	1260	
gaa aca ttg ata tct gag aat	aat gga tta cat aat	gat aca cac	3834
Glu Thr Leu Ile Ser Glu Asn	Asn Gly Leu His Asn	Asp Thr His	
1265	1270	1275	
aga gga aat atc agt gaa aag	gat tta atc gat att	cat ttg tta	3879
Arg Gly Asn Ile Ser Glu Lys	Asp Leu Ile Asp Ile	His Leu Leu	
1280	1285	1290	
aga aat gaa gcg ggt agt aca	ata tta gat gat tct	aga aga aat	3924
Arg Asn Glu Ala Gly Ser Thr	Ile Leu Asp Asp Ser	Arg Arg Asn	
1295	1300	1305	

gga gaa atg aca gaa ggt agc gaa agt gat gtt gga gaa tta caa Gly Glu Met Thr Glu Gly Ser Glu Ser Asp Val Gly Glu Leu Gln 1310 1315 1320	3969
gaa cat aat ttt agc aca caa caa aaa gat gaa aaa gat ttt gac Glu His Asn Phe Ser Thr Gln Gln Lys Asp Glu Lys Asp Phe Asp 1325 1330 1335	4014
caa att gcg agc gat aga gaa aaa gaa gaa att caa aaa tta ctt Gln Ile Ala Ser Asp Arg Glu Lys Glu Glu Ile Gln Lys Leu Leu 1340 1345 1350	4059
aat ata gga cat gaa gag gat gaa gat gta tta aaa atg gat aga Asn Ile Gly His Glu Asp Glu Asp Val Leu Lys Met Asp Arg 1355 1360 1365	4104
aca gag gat agt atg agt gat gga gtt aat agt cat ttg tat tat Thr Glu Asp Ser Met Ser Asp Gly Val Asn Ser His Leu Tyr Tyr 1370 1375 1380	4149
aat aat cta tca agt gaa gaa aaa atg gaa caa tat aat aat aga Asn Asn Leu Ser Ser Glu Glu Lys Met Glu Gln Tyr Asn Asn Arg 1385 1390 1395	4194
gat gct tct aaa gat aga gaa gaa ata ttg aat agg tca aac aca Asp Ala Ser Lys Asp Arg Glu Glu Ile Leu Asn Arg Ser Asn Thr 1400 1405 1410	4239
aat aca tgt tct aat gaa cat tca tta aaa tat tgt caa tat atg Asn Thr Cys Ser Asn Glu His Ser Leu Lys Tyr Cys Gln Tyr Met 1415 1420 1425	4284
gaa aga aat aag gat tta tta gaa aca tgt tct gaa gac aaa agg Glu Arg Asn Lys Asp Leu Leu Glu Thr Cys Ser Glu Asp Lys Arg 1430 1435 1440	4329
tta cat tta tgt tgt gaa ata tca gat tat tgt tta aaa ttt ttc Leu His Leu Cys Cys Glu Ile Ser Asp Tyr Cys Leu Lys Phe Phe 1445 1450 1455	4374
aat cct aaa tcg ata gaa tac ttt gat tgt aca caa aaa gaa ttt Asn Pro Lys Ser Ile Glu Tyr Phe Asp Cys Thr Gln Lys Glu Phe 1460 1465 1470	4419
gat gac cct aca tat aat tgt ttt aga aaa caa aga ttt aca agt Asp Asp Pro Thr Tyr Asn Cys Phe Arg Lys Gln Arg Phe Thr Ser 1475 1480 1485	4464
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Arg Lys Asn Leu	
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attttattat tatagg gat gat gaa aaa gga ttc tac gat tct aat tta Asp Asp Glu Lys Gly Phe Tyr Asp Ser Asn Leu 1515 1520 1525	4783
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 Asn Glu Val Ile Arg Phe Ile Glu Asn Glu Lys Asp Asp Lys Glu Asp 65 70 75 80	

Lys Lys Val Lys Ile Ile Ser Arg Pro Val Glu Asn Thr Leu His Arg  
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Tyr Pro Val Ser Ser Phe Leu Asn Ile Lys Lys Tyr Gly Arg Lys Gly  
100 105 110

Glu Tyr Leu Asn Arg Asn Ser Phe Val Gln Arg Ser Tyr Ile Arg Gly  
115 120 125

Cys Lys Gly Lys Arg Ser Thr His Thr Trp Ile Cys Glu Asn Lys Gly  
130 135 140

Asn Asn Asn Ile Cys Ile Pro Asp Arg Arg Val Gln Leu Cys Ile Thr  
145 150 155 160

Ala Leu Gln Asp Leu Lys Asn Ser Gly Ser Glu Thr Thr Asp Arg Lys  
165 170 175

Leu Leu Arg Asp Lys Val Phe Asp Ser Ala Met Tyr Glu Thr Asp Leu  
180 185 190

Leu Trp Asn Lys Tyr Gly Phe Arg Gly Phe Asp Asp Phe Cys Asp Asp  
195 200 205

Val Lys Asn Ser Tyr Leu Asp Tyr Lys Asp Val Ile Phe Gly Thr Asp  
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Leu Asp Lys Asn Asn Ile Ser Lys Leu Val Glu Glu Ser Leu Lys Arg  
225 230 235 240

Phe Phe Lys Lys Asp Ser Ser Val Leu Asn Pro Thr Ala Trp Trp Arg  
245 250 255

Arg Tyr Gly Thr Arg Leu Trp Lys Thr Met Ile Gln Pro Tyr Ala His  
260 265 270

Leu Gly Cys Arg Lys Pro Asp Glu Asn Glu Pro Gln Ile Asn Arg Trp  
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Ile Leu Glu Trp Gly Lys Tyr Asn Cys Arg Leu Met Lys Glu Lys Glu  
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Lys Leu Leu Thr Gly Glu Cys Ser Val Asn Arg Lys Lys Ser Asp Cys  
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Ser Thr Gly Cys Asn Asn Glu Cys Tyr Thr Tyr Arg Ser Leu Ile Asn  
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Arg Gln Arg Tyr Glu Val Ser Ile Leu Gly Lys Lys Tyr Ile Lys Val  
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Val Arg Tyr Thr Ile Phe Arg Arg Lys Ile Val Gln Pro Asp Asn Ala  
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Leu Asp Phe Leu Lys Leu Asn Cys Ser Glu Cys Lys Asp Ile Asp Phe  
370 375 380

Lys Pro Phe Phe Glu Phe Glu Tyr Gly Lys Tyr Glu Glu Lys Cys Met  
385 390 395 400

Cys Gln Ser Tyr Ile Asp Leu Lys Ile Gln Phe Lys Asn Asn Asp Ile  
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Cys Ser Phe Asn Ala Gln Thr Asp Thr Val Ser Ser Asp Lys Arg Phe  
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Cys Leu Glu Lys Lys Glu Phe Lys Pro Trp Lys Cys Asp Lys Asn Ser  
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Phe Glu Thr Val His His Lys Gly Val Cys Val Ser Pro Arg Arg Gln  
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Gly Phe Cys Leu Gly Asn Leu Asn Tyr Leu Leu Asn Asp Asp Ile Tyr  
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Gln Glu Gly Lys Leu Leu Trp Lys Lys His Gly Thr Ile Leu Asp Asn  
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Gln Asn Ala Cys Lys Tyr Ile Asn Asp Ser Tyr Val Asp Tyr Lys Asp  
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Trp Ile Leu Asn Arg Asn Lys Val Trp Glu Ser Met Arg Cys Gly Ile  
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Asp Glu Val Asp Gln Arg Arg Lys Thr Cys Glu Arg Ile Asp Glu Leu  
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Glu Asn Met Pro Gln Phe Phe Arg Trp Phe Ser Gln Trp Ala His Phe  
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Phe Cys Lys Glu Lys Glu Tyr Trp Glu Leu Lys Leu Asn Asp Lys Cys  
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Thr Gly Asn Asn Gly Lys Ser Leu Cys Gln Asp Lys Thr Cys Gln Asn  
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Glu Ile Gln Ser Val Lys Tyr Asp Lys Asp Arg Lys Leu Phe Ser Leu  
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Ala Lys Asp Lys Asn Val Thr Thr Phe Leu Lys Glu Asn Ala Lys Asn  
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Cys Ser Asn Ile Asp Phe Thr Lys Ile Phe Asp Gln Leu Asp Lys Leu  
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Ile Ser Glu Lys Asn Gly Glu Glu Leu Tyr Val Asn His Asn Ser  
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Lys Gln Pro Glu Lys Glu Ala Lys Gln Thr Asn Gly Thr Leu Thr Val  
785                    790                    795                    800

Arg Thr Asp Lys Asp Ser Asp Arg Asn Lys Gly Lys Asp Thr Ala Thr  
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Asp Thr Lys Asn Ser Pro Glu Asn Leu Lys Val Gln Glu His Gly Thr  
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Asn Gly Glu Thr Ile Lys Glu Glu Pro Pro Lys Leu Pro Glu Ser Ser  
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Glu Thr Leu Gln Ser Gln Glu Gln Leu Glu Ala Glu Ala Gln Lys Gln  
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Lys Gln Glu Glu Glu Pro Lys Lys Gln Glu Glu Glu Pro Lys Lys  
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Glu Glu Glu Glu Gln Lys Gln Glu Glu Glu Gln Gln Ile Gln Asp Gln  
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Ser Gln Ser Gly Leu Asp Gln Ser Ser Lys Val Gly Val Ala Ser Glu  
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Pro Glu Val Val Pro Gln Glu Thr Thr Ser Glu Asn Gly Ser Ser Gln  
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Asp Thr Lys Ile Ser Ser Thr Glu Pro Asn Glu Asn Ser Val Val Asp  
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Arg Ala Thr Asp Ser Met Asn Leu Asp Pro Glu Lys Val His Asn Glu  
980                    985                    990

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Thr Glu Asp Ser Met Ser Asp Gly Val Asn Ser His Leu Tyr Tyr  
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